

REMARKS

Claims 1-6 remain pending in the instant application.

Rejection Under 35 U.S.C. § 112

Claims 1-6 are rejected under 35 U.S.C. § 112, first paragraph, alleging a lack of enablement for the claim element “the internal circumferential surface of the outer machine part and the external circumferential surface of the inner machine part are fastened one over the other by means of compression connection”. Applicant respectfully traverses the rejection.

The stated basis for the rejection is that “[I]t is unclear what is meant by ‘compression connection’.” (Office Action at 2) This statement (“unclear”) sounds under 35 U.S.C. § 112, second paragraph, indefiniteness, not enablement under first paragraph, which are separate questions. *BJ Services Co. v. Halliburton Energy Services, Inc.*, 338 F.3d 1368, 67 USPQ2d 1692 (Fed. Cir. 2003).

A disclosure is enabling if it permits one of ordinary skill in the art to make and use the claimed invention without undue experimentation. *Id.* The Office Action asserts that “The specification does not describe what this assembly process encompasses.” However, the Office Action goes on to make a convincing argument why, between two possible applications of the term “compression connection”, one assembly method is inconsistent with the remaining structure of the claim, and also with the specification. The Office Action itself demonstrates a very reasonable ‘thought experiment’ that one of ordinary skill in the art could as easily have conducted. That artisan would then have reasoned how to obtain a compression connection in order to practice the invention of the present claims. As the Office Action itself proves, it would not require undue experimentation to practice the claimed invention. Therefore, the claims are, by definition, enabled.

Additionally, in para. 15 of the Response to Arguments section (Office Action at 10) the Examiner considers the claims to have only three structural features, none of which pertain to the “compression connection” feature of the claims which is the subject of the foregoing rejection under § 112, first paragraph. The Office Action specifically

dismisses a so-called “method of making” feature recited in claim 1 as not affecting the scope of the claim. Compare: “The specification does not describe what this assembly process encompasses” (Office Action at 2) with “ ‘[R]adial overlap’ is a method of making limitation and does not further limit the structural features of the claimed ‘subassembly’ ”, *Id.* at 11.

As a threshold matter, this reading of the claims does not comport with controlling law, because it has been held by the courts that the Office may not dissect a claim, excise subject matter from it, and declare the remaining portion of the mutilated claim to be unpatentable. The claim must be read as a whole. *In re Gulack*, 703 F.2d 1381, 217 USPQ 401 (Fed. Cir. 1983). Moreover, Applicant disagrees that the relevant feature recited in the claims is a method of making limitation, *infra*. However, as it relates to the present ground of rejection, the scope of enablement required is determined by the scope of the claims. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (“[T]here must be sufficient disclosure... to teach those of ordinary skill how to make and how to use the invention as broadly as it is claimed.”)(emphasis added). Therefore, it is irreconcilably inconsistent to assert, as the Office Action does, that the subject matter is simultaneously both non-enabled and irrelevant to the scope of the claim.

Applicant respectfully requests withdrawal of the rejection.

Applicant has raised the issue of definiteness, and the claim term “compression connection” is definite, because it apprises one of ordinary skill in the art as to what is or is not encompassed by the claim. “If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, Section 112 demands no more.” *Solomon v. Kimberly-Clark Corp.*, 16 F.3d 1372, 55 USPQ2d 1279, 1282 (Fed. Cir. 2000).

A search of the patent literature for the term “compression connection”, which was not reflected in the Examiner’s EAST search notes of record, would have uncovered, for example, U.S. Patent Nos. 6,942,558 to Wuensch (“Wuensch”), and 6,120,045 to Rosko (“Rosko”). Wuensch describes a “compression connection” between a flange (28) and a housing part (30) without further elaboration. Col. 2, lines 62-67. Wuensch recites the same “compression connection” as the sole limiting feature of dependent claim 3.

Rosko discloses a “compression connection” between a brake strip (32) and a base member (14). Col. 8, lines 39-44. In light of the usage of the term “compression connection” in Wuensch and Rosko, Applicant respectfully submits that the term is definite to one of ordinary skill in the art.

Claims 1-6 are also rejected under 35 USC § 112, first paragraph as lacking written description for the claim terms “radially overlap”, and “deformed radially outward” (underline showing additions by previous amendment). Applicant respectfully traverses the rejection.

The test for sufficient written description is not an *ipsis verbis* test. *Martin v. Johnson*, 454 F.2d 746, 172 U.S.P.Q. 391 (CCPA 1972); M.P.E.P. § 2163(II)(A)(3)(a). The specification must “describe the claimed invention so that one skilled in the art can recognize what is claimed.” *University of Rochester v. G.D. Searle & Co., Inc.*, 358 F.3d 916, 69 USPQ2d 1886 (Fed. Cir. 2004). Drawing the Examiner’s attention to the present specification, it states “[A] difference of up to 80 μm arises between the minimum and maximum overlap in the case of an internal diameter of the running disk of roughly 55 mm.” Specification, para. [0002]. This immediately informs one of skill in the art that the relevant dimension under consideration is diameter, i.e. a radial dimension. Further, the specification also states

[0018] It is clear that the dimensional spread of 80 μm mentioned in the general description in the case of an overlap from 40 to 120 μm and a deformation of the running disk 3 in the elastic range leads to a considerable change in the joint pressure, depending on wall thickness of the running disk 3, of from roughly 5 to 25 N/mm^2 .

[0019] A dimensional spread of 80 μm in the range from 180 to 260 μm overlap and with a deformation of the running disk 3 into the plastic material range leads only to a joint pressure change from roughly 28 to 30 N/mm^2 with a wall thickness of the running disk 3 of 2 mm and 21 to 22 N/mm^2 with a wall thickness of 1.5 mm.

All of relevant dimensions – inner diameter of the running disk, outer diameter of the raceway, thickness of the running disk – are radial dimensions. Therefore, it would be apparent to one of ordinary skill in the art that the dimensional overlap recited in claim 1

is a radial overlap. The amendment merely makes explicit what was implicit in the disclosure. In light of this, having read the specification, one of ordinary skill in the art would recognize that the Applicant did have possession of the claimed invention, including that “the dimensions of the inner and outer machine parts radially overlap”.

Moreover, it would also be apparent to one of ordinary skill in the art that where there is a overlap or radial dimension between two cylindrical parts, regardless of the context, “the outer machine part is deformed radially outward” as recited in claim 1. The relationship between the inner and outer machine parts recited in claim 1, i.e. a radial overlap, can deform the outer machine part in only one direction, outward. Again, the test is not *ipsis verbis*, but whether one of ordinary skill in the art would recognize what is claimed. *University of Rochester, supra*. The specification clearly evidences to one of ordinary skill in the art that the Applicant did have possession of the claimed invention, including that in the context of claim 1 “the outer machine part is deformed radially outward”.

Applicant respectfully submits that the rejections of claims 1-6 as lacking written description are poorly taken, and kindly requests favorable reconsideration and withdrawal.

Rejection Under 35 U.S.C. § 102

Claims 1 and 4 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 1,441,459 to Small (“Small”). Applicant respectfully traverses the rejection.

Claim 1 recites, *inter alia*,

A subassembly comprised of at least two machine parts...
...outer and inner machine parts being so positioned along
an axis with respect to each other that the dimensions of the
inner and outer machine parts radially overlap, and
respective materials thereof are selected such that the outer
machine part is deformed radially outward into the plastic
range of material strain.

The Office Action does not address this feature of the claim. However, it is well-settled by the courts that “Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.” *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Company et al.*, 730

F.2d 1452, 221 USPQ 481 (Fed. Cir., 1984).

The Office Action instead asserts that “radial outward” deformation is a method of making limitation, and does not distinguish the claim. (Office Action at 11) Applicant respectfully disagrees. The instant specification describes that by selecting the deformation of the outer machine part to be in the plastic range of material strain, that within a dimensional spread, i.e. tolerance, of 80 μm , the joint pressure in the compression connection between an inner raceway machine part and an outer running disk machine part varied by only 2 N/mm^2 . (See, paras. [0018], [0019]) This is in contrast to the case where the deformation is in the elastic range, which produces a variability of up to 20 N/mm^2 , ten times as great. Therefore, as disclosed in the present specification, by deforming the outer machine part in the plastic range, the variability of the pressure in the compression connection between the two machine parts is reduced by a factor of ten. This is a physical material property that is manifest by the claimed method of making. “The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art.” M.P.E.P., § 2113.

Further, as would be apparent to one of ordinary skill in the art, deformation in the plastic range of material strain induces a directional strain in the deformed material. Therefore, as recited in claim 1, “an outer machine part having an internal circumferential surface ... deformed radially outward into the plastic range of material strain” will exhibit tensile strain in the circumferential direction.

In contrast, Small discloses that to form a composite tube of two metals, a first tube (8) is slidably placed over a second (1b), i.e., no dimensional overlap in the radial dimension. Thereafter, the two tubes are drawn axially through a die (9) to compress the outer tube onto the inner. Accordingly, the tensile material strain induced in the Small composite tube is in the axial direction, not in the circumferential direction. This is distinguished from the feature recited in claim 1. The feature of the claim is not specifically the method of forming, i.e., radial outward deflection, but rather the structure that is the result of radial outward deflection, and its effect on the compression connection between the inner and outer machine parts.

Turning to claim 4, this dependent claims recites

...the wall thickness of the outer machine part is selected such that the contraction of the inner machine part corresponds to an expected level of contraction induced by an outer machine part having a predetermined greater wall thickness, at maximum radial overlap of the compression connection, where the outer machine part of the predetermined wall thickness would remain within a range of elastic deformation.

The Office Action cites from certain caselaw without explaining its applicability to the features of claim 4. Applicant submits that the Office Action has not set forth a *prima facie* rejection of claim 4. A PTO patent application claim rejection violates Section 132 if it “is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection.” *Chester v. Miller*, 906 F.2d 1574, 1578, 15 USPQ2d 1333, 1337 (Fed. Cir. 1990). In this case, the Office Action does not articulate the relevance of the cited case law to the claims, nor how the cases meet the specific features recited in claim 4 to support the rejection. On this subject, the courts have held that “[I]t is inappropriate to squeeze new factual situations into preestablished pigeonholes.” *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir., 1990) (internal quotes omitted).

Moreover, claim 4 recites specific material (i.e., physical) properties of the components within its claimed scope. According to claim 4, in addition to the outer machine part is deformed outward into a plastic range of material strain per underlying independent claim 1, the contraction of the inner machine part corresponds to an expected level of contraction induced by an outer machine part having a predetermined greater wall thickness (*inter alia*). These are not mere product-by-process limitations, as the Office Action seems to imply, but it recites the material state of the inner machine part, i.e. it is in a state of contraction, and by how much. Furthermore, even if, *arguendo*, that the recited feature of claim 4 is product-by-process, it may not simply be disregarded, as the Office Action has done, but rather must be addressed for the structure that any process steps imply. See, *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding “interbonded by interfusion” to limit structure of the claimed composite and noting that terms such as “welded,” “intermixed,” “ground in place,” “press fitted,”

and “etched” are capable of construction as structural limitations); M.P.E.P. § 2113.

For at least these reasons, Applicant respectfully submits that the rejection of claims 1 and 4 over Small has been obviated, and kindly requests favorable reconsideration and withdrawal.

Claims 1 and 4 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 1,839,964 to Harvey (“Harvey”). Applicant respectfully traverses the rejection.

Like Small, Harvey teaches the making of a bimetallic tube by drawing two separate tubes through a die to reduce the diameter of the tubes by plastic deformation, and thereby form a single bimetallic tube. However, this product is structurally distinguished from the present claims for the same reasons as the Small composite tube, as detailed above. Therefore, for the same reasons, claims 1 and 4 are patentably distinguished over Harvey. Applicant respectfully submits that the rejection of claims 1 and 4 over Harvey has been obviated, and kindly requests favorable reconsideration and withdrawal.

Rejection Under 35 U.S.C. § 103

Claims 2, 3 and 5 are rejected under 35 U.S.C. §103(a) as obvious over Harvey in view of U.S. Patent No. 6,267,712 to Franke (“Franke”). Applicant respectfully traverses the rejection.

Claim 2 recites

The subassembly of claim 1, wherein the outer machine part comprises a tensioning roller including a running disk made of steel and the inner machine part comprises a raceway ring of a rolling bearing with an internal circumference on which the raceway is defined.

It has been held by the courts that to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In this case, even presuming that there is some reason for one of ordinary skill in the art to combine Harvey and Franke, their combination does not arrive at the claimed invention. This is because neither Harvey nor Franke teaches or suggest a product including an outer machine part having the material properties resultant from being formed by outward radial

deformation. Therefore, claims 2, 3, and 5, all of which depend from independent claim 1 and incorporate its features by reference, are distinguished over Harvey and Franke for at least the same reasons.

Additionally, the rejection fails because combining the two references as set forth in the Office Action would destroy the structure of Franke. The Office Action states “The structural features of Harvey are what are being relied upon since the instant invention is directed to a product not a method of making.” (Office Action at 12) However, This position is contrary to the controlling caselaw. The courts have held that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). Further, the courts have held that “If when combined, the references ‘would produce a seemingly inoperative device,’ then they teach away from their combination.” *Tec Air Inc. v. Denso Manufacturing Michigan Inc.*, 192 F.3d 1353, 52 USPQ2d 1294 (Fed. Cir. 1999).

In this case, The Office Action proposes to combine a Ball-Bearing Pressure Roller For Textile Machines as taught by Franke, with the Process For Making Bimetallic Tubes taught by Harvey. The title of Harvey alone makes its method of making relevant to the proposed combination. Absent the hindsight benefit of Applicant’s own disclosure, from the two references one skilled in the art would be presented with a method of making a bimetallic bearing metal tube (Harvey, p. 1, lines 19-25) by cold-drawing deformation that would reduce the diameter of the cylindrical parts. As Harvey teaches, the parts must be positioned relative to one another before the cold-drawing process. Considering a hypothetical combination with Franke, positioning the inner bearing raceway and then passing through the reduction die would deform in so as to destroy its usefulness. This deformation would not be desirable nor even tolerable if the inner machine part comprised a raceway ring of a roller bearing as recited in claim 2. The raceway ring of a roller bearing is known to one skilled in the art to require exacting dimensions and typically considerable hardness. In light of this, one of ordinary skill in the art would not be motivated to deform a raceway ring by cold drawing as taught in Harvey. Such a process would effectively destroy the raceway ring. Therefore, objectively considering all relevant teachings of the references in accordance with

controlling law, the references teach away from their combination.

Because the references teach away from their combination, Applicant respectfully submits that the rejection of claims 2, 3, and 5 is poorly taken, and kindly requests favorable reconsideration and withdrawal.

Claims 1-6 are rejected under 35 U.S.C. §103(a) as obvious over Franke in view of Admitted Prior Art. Applicant respectfully traverses the rejection.

The Office Action alleges that statement of controlling section 112 caselaw, i.e., that “an applicant is entitled to omit what is well-known to those of ordinary skill in the art” amounts to an admission affecting the present claims. Applicant categorically denies that the quoted statement is an admission of prior art. That statement is nothing more than an accurate statement of the controlling law affecting the enablement rejection. There is nothing in the quoted statement that describes the structure of a compression connection recited in claim 1 together with an admission that the structure so described is known in the art. A more careful reading of Applicant’s statements in the Response to the previous Office Action reveals Applicant’s only ‘admission’, such that it is, is that in light of Applicant’s own description in the specification, that one of ordinary skill in the art would be enabled to make and use the invention, including the compression connection feature recited in claim 1.

Additionally, even if a ‘compression connection’ is taken to be admitted prior art, the alleged admission still does not reach claim 1, at least in part because claim 1 recites “the outer machine part is deformed radially outward into the plastic range of material strain” which is not even suggested to be the subject of any admission. The Office Action states that a compression connection or “force fit”, “is known to create plastic deformation of the outer part in the plastic range.” Office Action at 3. Applicant submits that as understood by those skilled in the art, a force fit does not contemplate plastic deformation of the outer part. As described in the specification, a compression connection as recited in claim 1 can be obtained with either elastic or plastic deformation of the outer part. The Office Action cites no authority for its assertion that a force fit includes plastic deformation, and Applicant submits that there is none. To the contrary, Mark’s *Mechanical Engineer’s Handbook* describes a medium force fit as one which

stresses cast iron to its elastic limit, and a heavy force fit as not exceeding the elastic limit of steel holes. *Mark's*, pp. 902-903. Therefore, it is the conventional wisdom of the art to NOT have plastic deformation in a force fit, only within the bounds of elastic deformation. "Proceeding contrary to the accepted wisdom ... is strong evidence of unobviousness." *Ruiz v. A.B. Chance Co.*, 234 F3d 654, 57 USPQ2d 1161 (Fed. Cir., 2000) (internal citation and quotes omitted) Therefore, the subject matter of claim 1 is patentable over Franke, taken alone or as modified by the so-called admission. Claims 2-6 depend, either directly or indirectly from claim 1, and incorporate its features by reference. These dependent claims are separately patentable, but are offered as patentable for at least the same reasons as their underlying independent base claim.

Applicant respectfully submits that the rejection is poorly taken, and kindly requests favorable reconsideration and withdrawal.

Conclusion

In light of the foregoing, Applicant respectfully submits that all claims are patentable and kindly requests an early and favorable notice of allowability. In the interest of brevity, Applicant has addressed only so much of the rejections as is considered sufficient to demonstrate the patentability of the claims. Applicant's failure to address any portion of the rejections should not be construed as an acquiescence in the propriety of such portions not addressed. Applicant maintains that the claims are patentable for reasons other than those specifically discussed, *supra*.

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Respectfully submitted,



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